

REMARKS

Claims 29-50 are in the application of which claims 29 and 40 are in independent form.

The claims are not amended in this response.

Claims 29, 32-35, 40-42 & 46-50. Claims 29, 32-35, 40-42 & 46-50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art (APA) (FIG. 1 and FIG. 9).

The Office action, p. 3, states:

"APA does not explicitly disclose the semiconductor capacitor operating in depletion mode to provide decoupling capacitance between the first and second conductors.

"However, this limitation 'depletion mode' is an operating function of device rather than a structure of device. Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. [Citing In re Danly.] [A]pparatus claims cover what a device is, not what a device does. [Citing Hewlett-Packard Co. v. Bausch & Lomb Inc.]"

In Re Danly, 120 USPQ 528 (CCPA 1959), concerned whether certain claims were patentable over the prior art. Claim 1 was directed to a power press tie rod heating system and at the conclusion of a listing of structural elements recited "the construction being such that alternating electric current may be passed through the tie rod to heat the same." 120 USPQ at 529. The CCPA stated:

"Claims 1 and 2 are not limited to the actual use of alternating current. Those claims call for a press structure in which the tie rods are insulated from the frame and in which the construction is 'such that alternating current may be passed through the tie rod to heat the same.' It is evident that the quoted expression does not constitute a structural limitation, since an alternating current *may* be passed through any tie rod which is insulated from the press frame. * *

"In view of the references of record, appellant's invention does not reside in a press in which it is *possible* to pass alternating current through the tie rods to heat them, but in a method and apparatus in which that is actually done. Claims drawn to an apparatus must distinguish from the prior art in terms of structure rather than function. [Citations omitted.] It follows that claims 1 and 2 fail to define a patentable distinction over the patents on which they stand rejected, and were properly rejected for that reason." 120 USPQ at 531 (emphasis in original.)

In contrast to In re Danly, in this present application, claims 29 and 40 do not state the capacitor may be operated to be in depletion mode, they state the decoupling capacitor is in depletion mode ("the semiconductor decoupling capacitor thereby being in depletion mode.") Accordingly, the depletion mode feature is a limitation to the claim. Indeed, it is central to the

invention.

In, Hewlett-Packard Co. v. Bausch & Lomb, Inc., 15 USPQ2d 1515, 1528 (Fed. Cir. 1990), claim 1 of the LaBarre patent concerned an X-Y plotter system. The LaBarre patent was owned by Hewlett-Packard (HP) and was infringed by Bausch & Lomb (B&L). On the subject of obviousness, the Federal Circuit stated:

"The critical language is the last clause of claim 1: 'wherein the rough surface ... has a random pattern, size, and height of rough spots.' B&L agrees that the use of grit provides great advantages over a knurled wheel. * * * However, B&L maintains that claim 1 does not specifically recite 'grit,' that it is improper to read the limitation of 'grit' into the claims, and that therefore whatever unobvious advantages may be realized by the use of grit are irrelevant. Since, argues B&L, the use of a 'random pattern, size and height of rough spots' on the wheel does not provide an 'operational difference' over a knurled wheel, this limitation in claim 1 does not render claim 1 unobvious over Yeiser.

"We find this argument without merit. The above-described language from claim 1 is a reasonable description of what 'grit' is * * *.

"Secondly and more importantly, there is no requirement, as B&L implies, that HP show 'operational differences' of the claimed device over the prior art. Claim 1 of LaBarre is an apparatus claim, and apparatus claims cover what a device *is*, not what a device *does*. An invention need not *operate* differently than the prior art to be patentable, but need only *be* different." 15 USPQ2d at 1527-28 (Emphasis in original.)

The facts of Hewlett-Packard have no real applicability here. If the Office action were saying applicants had to show 'operational differences' of the claims 29 and 40 over the prior art, then this case might be applicable. However, the Office action is not saying that. Rather, the Office action is saying that some words of the claims are not limitations. This situation was not discussed in Hewlett-Packard.

At any rate, for at least two reasons, the claims are structurally different from the APA of FIGS. 1 and 9, which are inversion mode devices. (See, specification, page 13.) First, a device is structurally different when it is inversion mode than when it is in depletion mode. This structural difference is illustrated on page 181 of N. Weste et al., Principles of CMOS VLSI Design (2nd Ed. 1993), which is item no. 6 in an IDS, an initialed copy of which was returned with the Office action dated November 8, 2000. Page 181 shows a schematic cross-section of a device in (a) accumulation mode, (b) depletion mode, and (c) inversion mode. As can be seen, the device is structurally different in the different modes.

Since the prior art does not teach place a decoupling capacitor in depletion mode (and, in

fact, teaches away from it because there is poor decoupling capacitance in depletion mode), the rejections should be withdrawn.

Second, the placement of power and ground voltage conductors and body, gate, and source/drain types is different in some claims than in FIGS. 1 and 9. Table 1, below, clearly shows the structural differences.

	Mode	Gate Voltage	Body Voltage	Body type	Gate type	S/D type	Diffusion Type	Example Figures
FIG. 1	Inversion	Ground	Power	n-type	p-type	p-type	n-type	FIG. 1
FIG. 9	Inversion	Power	Ground	p-type	n-type	n-type	p-type	FIG. 9
Claim 29	Depletion	Power	Ground					FIGS. 5, 6
Claim 30	Depletion	Power	Ground	n-type	p-type		n-type	FIGS. 5, 6
Claim 31	Depletion	Power	Ground	n-type	p-type			FIGS. 5, 6
Claim 32	Depletion	Power	Ground					FIG. 5
Claim 36	Depletion	Power	Ground	n-type	p-type	p-type	n-type	FIG. 6
Claim 40	Depletion	Ground	Power					FIGS. 11, 12
Claim 41	Depletion	Ground	Power	p-type	n-type		p-type	FIGS. 11, 12
Claim 42	Depletion	Ground	Power	p-type	n-type			FIGS. 11, 12
Claim 43	Depletion	Ground	Power					FIG. 11
Claim 47	Depletion	Ground	Power	p-type	n-type	n-type	p-type	FIG. 12

Table 1

Based on the information in Table 1, in addition to being in depletion mode rather than inversion mode, claims 29, 30, 31, 32, 36, 41, 42, and 47 include difference structure than FIG. 1 and claims 30, 31, 32, 36, 40, 41, 43, and 47 include different structure than FIG. 9. This also applies to dependent claims not specifically listed in Table 1. These differences in structure are not just obvious design choices, but rather are ways of accomplishing depletion mode, which the prior art teaches away from.

Claims 35, 39, 46, and 50 refer to the power supply voltage having a smaller absolute value than does the flatband voltage. The flatband voltage was understood before the invention and having power supplies of less than 1 volt have been proposed. However, these claims

combine this power supply voltage with depletion mode capacitors and these claims should be allowed.

Claims 30-31, 36-39 & 43-45. Claims 30-31, 36-39 & 43-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over APA (FIG. 9) in view of APA (FIG. 1).

In addition to being dependent on claim 29 or 40, claims 30, 31, 36, and 43 in Table 1 have additional differences. Claims 39 and 50 are discussed above.

Note that merely because applicants do not specifically argue that certain limitations of a claim are not in the references is not a concession that a reference or combination of references includes the limitations. That applicants do not contradict a particular statement made in the Office action is not a concession that applicants agree with it. Further, merely because applicants do not separately argue the patentability of every dependent claim is not a concession that there are not additional reasons for patentability of these dependent claims.

Applicants believe the application is in condition for allowance and respectfully request the same.

Respectfully submitted,

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The claims are not amended in this response.